

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 03/01564

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>  IPC7: C02F 1/32, C02F 1/78, B01J 21/06 <small>According to International Patent Classification (IPC) or to both national classification and IPC</small>				
<b>B. FIELDS SEARCHED</b>  Minimum documentation searched (classification system followed by classification symbols)  IPC7: C02F  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  SE,DK,FI,NO classes as above  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  WPI DATA, EPO-INTERNAL, PAJ				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 4230571 A (ROBERT C. DADD), 28 October 1980 (28.10.80), column 2, line 16 - line 24; column 2, line 42 - line 45; column 3, line 40 - column 6, line 3, figure 1	1,3-5,6-7,10		
Y	--	2,8-9		
X	US 4141830 A (ANTHONY J. LAST), 27 February 1979 (27.02.79), column 2, line 43 - column 3, line 62, figure 2	1,3-5,6-7,10		
Y	--	2,8-9,11-21		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; border: none;">           * Special categories of cited documents:            "A" document defining the general state of the art which is not considered to be of particular relevance            "E" earlier application or patent but published on or after the international filing date            "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)            "O" document referring to an oral disclosure, use, exhibition or other means            "P" document published prior to the international filing date but later than the priority date claimed         </td> <td style="width: 50%; vertical-align: top; border: none;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention            "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone            "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art            "&amp;" document member of the same patent family         </td> </tr> </table>			* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family			
Date of the actual completion of the international search		Date of mailing of the international search report		
10 December 2003		09-01-2004		
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer  Jens Waltn/ELY Telephone No. +46 8 782 25 00		

Form PCT/ISA/210 (second sheet) (July 1998)

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9501307 A1 (UVOX HOLDINGS PTY. LTD.), 12 January 1995 (12.01.95), page 10, line 25 - page 13, line 29; page 15, line 8 - line 19; page 6, line 14 - line 17, figures 2-4	1,3-5,6-7,10
Y	--	2,8-9,11-21
X	US 4273660 A (STUART W. BEITZEL), 16 June 1981 (16.06.81), column 3, line 7 - column 4, line 68	1,3-5,6-7,10
Y	--	2,8-9
Y	US 20020043504 A1 (JIAN CHEN ET AL), 18 April 2002 (18.04.02), sections (0001)-(0005),(0008),(0024), figures 1-6	11-21
Y	--	11-21
Y	US 20010050218 A1 (ALI TABATABAIE-RAISSI ET AL), 13 December 2001 (13.12.01), sections (0001)-(0002),(0165)-(0170),(0018)-(0019), (0314)-(0319), examples 20,21, figures 19a,19c,21a, 21b	11-21
Y	--	19-21
Y	US 5843309 A (PHILIP W. MANCIL), 1 December 1998 (01.12.98), column 2, line 27 - line 35; column 5, line 35 - line 44, figures 2,5	19-21
Y	--	2,8-9,17-18
Y	WO 9620017 A1 (SØREMARK, RUNE), 4 July 1996 (04.07.96), page 6, line 17 - page 7, line 32; page 10, line 5 - line 6	2,8-9,17-18
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**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/SE03/01564**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

**See extra sheet**

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

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The subject matter of independent claim 1 has been found to lack novelty in view of W095/01307 and inventive step with respect to US4230571 among others and the subject matter of claim 6 lacks novelty in view of US4230571 among others.

Since the invention according to the independent claims lacks novelty/inventive step, the dependent claims relate to several inventions, as follows:

- A: claims 2 and 8-9 relate to the use of a catalyst
- B: claims 3-4 relate to the wavelengths of the UV radiation
- C: claims 5 and 10 relate to mixing using an ejector
- D: claim 7 relates to a quartz tube surrounding the UV-lamp
- E: claims 11-21 relates to a modular configuration of several treatment units

Further, since claim 11 is considered to lack an inventive step with respect to US4141830 in combination with US2002/0043504, the subject matter of claims 12-21 also falls apart into several inventions:

- F: claims 12-16
- G: claims 17-18
- H: claims 19-21.

INTERNATIONAL SEARCH REPORT  
Information on patent family members

31/10/03

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Patent document cited in search report			Publication date	Patent family member(s)		Publication date
US	4230571	A	28/10/80	NONE		
US	4141830	A	27/02/79	CA	1048733 A	20/02/79
WO	9501307	A1	12/01/95	AU	7064994 A	24/01/95
				CA	2193739 A	12/01/95
				CN	1130373 A	04/09/96
				EP	0708738 A	01/05/96
				ZA	9404772 A	22/02/95
US	4273660	A	16/06/81	US	4189363 A	19/02/80
US	20020043504	A1	18/04/02	NONE		
US	20010050218	A1	13/12/01	NONE		
US	5843309	A	01/12/98	US	6120691 A	19/09/00
WO	9620017	A1	04/07/96	AT	218894 T	15/06/02
				AU	698109 B	22/10/98
				AU	4361296 A	19/07/96
				DE	69527086 D,T	19/12/02
				DK	800407 T	07/10/02
				EP	0800407 A,B	15/10/97
				ES	2178681 T	01/01/03
				JP	10511572 T	10/11/98
				PL	178088 B	29/02/00
				PL	321430 A	08/12/97
				PT	800407 T	29/11/02
				SE	504204 C	09/12/96
				SE	9404555 A	29/06/96
				SI	800407 T	00/00/00
				US	5961920 A	05/10/99
				US	6358478 B	19/03/02